

ON THREE SPECIES OF ISOPOD CRUSTACEA FOUND IN
THE NESTS OF ANTS IN SOUTH AUSTRALIA.

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[Read May 8, 1913.]

PLATES II. AND III.

In 1894 Wasmann—*Kritisches verzeichniss de myrmekophilen und termitophilen arthropoden*, Berlin, 1894—enumerated nine species of Oniscoidea found in association with ants in their nests. The list is as follows:—

1. *Metoponorthus myrmecophilus*, Stein, Dalmatia.
2. *Platyarthrus hoffmanseggi*, Brandt, Europe.
3. „ *schhöbli*, Budde-Lund, Canary Islands.
4. „ *caudatus*, Aub. et Dollfus, Europe.
5. „ *simoni*, Dollfus.
6. *Lucasius (Porcellio) pallidus*, S. France.
7. „ *hirtus*, Aub. et Dollfus, Marseilles.
8. „ *myrmecophilus*, Luc.
9. *Leptotrichus inquilinus*, Klbl., Somali Coast.

To these must be added—

10. *Trichoniscus commensalis*, Chilton, New Zealand.

Of the three species here described the first two have been found together in the nests of *Camponotus nigriceps* in several parts of this State, and the first also with *Myrmecia forficata*. I am of opinion that these will be recorded from nests of other species of ants. That they are true *Myrmecophiles* there seems to be no doubt. The third is from a termite's nest, and may probably also be found with ants; it is a very minute species of about 2 mm. long, and consequently very difficult to handle.

I am indebted to Mr. A. M. Lea, of the South Australian Museum, for many specimens; also for the names of the ants.

ISOPODA.

Tribe, ONISCOIDEA.

Family, ONISCIDÆ.

Genus, ONISCUS, Linn.

ONISCUS MYRMECOPHILUS, n. sp. Plate ii., figs. 1-10.

The body is little convex, with minute scale-like hairs, which are not crowded.

The head is rather rough, about three times broader than long; it projects a little medianly, being declivous anteriorly;

the antero-lateral lobes are moderately developed, and project obliquely. The face (epistome or clypeus) is convex. The eyes are small, of about 7 or 8 ocelli. The segments of the thorax have their epimera laterally expanded and distinctly marked; the first segment has its antero-lateral angles reaching to the lateral lobes of the head, the posterior angles of the following segments project behind in increasing degree backwards. The *abdomen* is short, with the lateral parts of segments 3, 4, and 5 projecting much behind, those of the 5th reaching nearly to the level of the end of the 6th segment, this is very acute, a good deal broader than long, triangulate, narrowing rather abruptly, with sides incurved, reaching a little beyond the peduncle of the uropods. The antennules are very small, 3-jointed, the middle joint shortest, the distal one with a short setum. The antennæ are finely setose, the flagellum is rather slender, composed of three joints, the middle one shorter than the proximal, the distal being equal in length to the 1st and 2nd taken together, it ends in a setum; the whole flagellum is slightly longer than the 5th peduncular joint. The mandibles are strong; in the left one the incisory process is 4-toothed, the secondary plate is bifid, and following it is a pad of setæ with a small penicil close to it and a longer one somewhat further away in the proximal direction. The right mandible also has a secondary plate, which is feebly chitinized. The first pair of *legs* are partially prehensile, as the propodus is slender and slightly curved; the three preceding joints are robust, and bear numerous stiff barbed setæ. The remaining legs have rather slender propodi and dactyli. In the female only the exopod of the first pleopod is lobed, and that only slightly; the margins bear few small setæ. The peduncles of the uropods are short, and the inner rami are articulated quite near the outer; the outer are stiliform, with slight grooves on the outer sides, a little compressed in the dorso-ventral direction. The inner rami are slightly compressed, in the lateral direction they reach to about half the length of the outer.

The colour is pale-slate, with the usual lighter markings on the dorsal surface.

Family, ARMADILLIDIDÆ.

Genus, CUBARIS, Brandt.

CUBARIS COMMENSALIS, n. sp. Plate iii.

The body is strongly convex, with the pleural portions of each segment of the thorax projecting downwards and a little outwards at the extremities; covered with laterally compressed tubercles, which are mostly regular in longitudinal and transverse series, thus each thoracic segment except the first

carries usually two transverse rows, the posterior row in each case projecting slightly beyond the posterior margin of each segment. Besides the tubercles the surface is minutely granulate.

The *head* is about three times as broad as long, with smaller tubercles arranging themselves in four more or less regular transverse rows. The anterior ridge is arcuate, strongly marked, and complete. The face is slightly excavate below the ridge and again deeper, providing recesses for the antennæ. The eyes are very small, with few ocelli—two or three—which are rather separate and at the base of a small tubercle. The first segment of the thorax has more than two transverse rows of tubercles, but the more anterior ones are irregular and more conical in shape; the lateral margin of this segment is slightly turned up, posteriorly this margin has a well-defined notch, but is not grooved for any distance along the margin. The epimera of the succeeding segments are slightly excavated and free from tubercles below. The first two segments of the *abdomen* are without tubercles—the second has faint tubercles in some specimens—but each of the three following has a single transverse row which projects behind, also the terminal segment has two large tubercles, each sometimes obscurely divided into two, and outward from these there is one on each side obscuring the margin; the end is slightly excavate. The antennules are very minute and obscurely jointed. The antennæ are small and short, with the two jointed flagellum much shorter than the fifth peduncular joint; this is about as long as the two joints which precede it taken together; the flagellum also is much narrower than the peduncle, its proximal joint being short. The labrum is well defined and prominent. The mandibles are normal and rather short. The *legs* are robust, with the joints rather sparsely spined, the propodi are short and tapering, the dactyli small; there are no dactylar setæ. The exopods of the pleopods are provided with respiratory lobes which project laterally but are not much thickened. The outer rami of the uropods are very minute; each terminates in a small setum. The inner rami are larger, but still very short.

Several specimens have been examined; in some the body is more ovate and the epimera more spreading; the tubercles also vary in size and definiteness. In some the antennæ are longer and slenderer.

The colour varies from light-slate to brownish-white.

CUBARIS MINUTA, n. sp. Plate ii., figs. 11-16.

The body is rather loosely compacted, covered with large laterally compressed tubercles, for the most part arranged in

regular transverse lines; though not so numerous they are larger proportionately than in the preceding species.

The *head* bears smaller and more rounded tubercles than in the same species, the eyes are very small, the ocelli (two or three) seem to be confluent. The face is slightly excavated above, with the upper arcuate margin not very distinct and slightly indented in the middle, with the external angles definite, sculptured to accommodate the antennæ, the cavities thus formed separated by a median ridge. The first segment of the thorax is the longest; its posterior angles are not deeply cleft, the cleft visible from the outside; the remainder of the lateral margin is a rather thin edge. The following segments each become a little longer from before backwards. The first *abdominal* segment is short, the second has two transverse tubercles, the third, fourth, and fifth are strongly tuberculate; these segments do not project much at their lateral extremities. The sixth segment is about twice as wide as long, convex, curved under the body; it bears two transverse tubercles. Antennules are present, but are very small. The antennæ are short, the peduncular joints much thickened in contrast to the small 2-jointed flagella, the proximal joints of which are very short.

The mandibles are strong, the left one with three penicils, the right one with two. The *legs* are moderately robust and sparsely spined. The external rami of the uropods are wanting, the inner rami do not reach the end of the *abdomen*, the peduncles are 5-sided as seen from below.

The colour is white, with pale-brown markings.

The length is about 2 mm.

DESCRIPTION OF PLATES.

PLATE II.

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| Fig. | 1.— | <i>Oniscus myrmecophilus</i> , | n. sp., 4 diameters. |
| " | 2.— | " | antenna. |
| " | 3.— | " | portion of left mandible, distorted. |
| " | 4.— | " | 1st maxilla. |
| " | 5.— | " | 2nd maxilla. |
| " | 6.— | " | maxilliped. |
| " | 7.— | " | last segment of abdomen, etc. |
| " | 8.— | " | uropod from below. |
| " | 9.— | " | 1st pleopod, male. |
| " | 10.— | " | 2nd pleopod, male. |
| " | 11.— | <i>Cubaris minuta</i> , | n. sp., 15 diameters. |
| " | 12.— | " | face with antenna. |
| " | 13.— | " | lateral margins of 1st two segments of thorax from below. |
| " | 14.— | " | 1st leg. |
| " | 15.— | " | abdomen from behind. |
| " | 16.— | " | uropods from below. |

PLATE III.

Fig.	1.—	<i>Cubaris commensalis</i> , n. sp., 5 diameters.
"	2.—	" " " "
"	3.—	" 1st maxilla. "
"	4.—	" maxilliped.
"	5.—	" face with antenna and lateral margin of 1st two segments of thorax.
"	6.—	" last segment of abdomen, etc., from above.
"	7.—	" last segment of abdomen, etc., from below.
"	8.—	" 6th leg.
"	9.—	" 1st pleopod of male.
"	10.—	" 2nd pleopod of male.
"	11.—	" 3rd pleopod of male.
"	12.—	" 4th pleopod of male.